



Mineral Industry Surveys

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COBALT IN APRIL 2003

U.S. consumption of cobalt in January through April 2003 was 13% lower than consumption during the first 4 months of 2002, according to the U.S. Geological Survey. The cobalt content of U.S. imports of cobalt metals and chemicals was 23% lower in

January through March 2003 than that of imports during the same period in 2002. The cobalt content of U.S. exports of unwrought cobalt and chemicals was 7% higher in January through March 2003 than that during the same period in 2002.

TABLE 1
U.S. REPORTED CONSUMPTION OF COBALT MATERIALS¹

(Metric tons, contained cobalt)

Period	Metal ²	Oxide and other chemical compounds ³	Scrap	Total
2002:				
April	341	112	215	668
May	349	101	215	665
June	300	113	215	628
July	312	105	215	632
August	321	113	215	648
September	313	119	215	646
October	311	102	215	627
November	334	102	215	651
December	305	101	215	621
January-April	1,400	414	859	2,670
January-December ⁴	3,940	1,270	2,580	7,790
2003:				
January	258 ^r	155	167 ^r	580 ^r
February	251 ^r	160	167 ^r	578 ^r
March ^f	250	170	167	588
April	251	164	167	582
January-April	1,010	649	669	2,330

^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes metal powder.

³Data may include other cobalt materials.

⁴Data based on monthly reports.

TABLE 2
U.S. REPORTED CONSUMPTION OF COBALT, BY END USE¹

(Metric tons, contained cobalt)

End use	2003			
	January- April	January- December ²	April	January- April ³
Steel	189 ^r	543	32	128
Superalloys	1,400 ^r	3,970	261	1,050
Magnetic alloys	127 ^r	374	30	121
Other alloys ⁴	W	W	W	W
Cemented carbides ⁵	243 ^r	747	55	226
Chemical and ceramic uses ⁶	610 ^r	1,860	181	715
Miscellaneous and unspecified	100 ^r	300	23	91
Total	2,670 ^r	7,790	582	2,330

^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Data based on monthly reports.

³May include revisions to prior months.

⁴Includes nonferrous alloys, welding materials, and wear-resistant alloys.

⁵Includes diamond tool matrices, cemented and sintered carbides, and cast carbide dies or parts.

⁶Includes catalysts, driers in paints or related usage, feed or nutritive additive, glass decolorizer, ground coat frit, pigments, and other uses.

TABLE 3
U.S. REPORTED STOCKS OF COBALT MATERIALS¹

(Metric tons, contained cobalt)

Period	Industry ²			Total	U.S. Government, metal ⁵
	Metal ³	Oxide and other chemical compounds ⁴	Scrap		
2002:					
April	368	247	134	749	NA
May	359	240	134	733	NA
June	354	231	134	719	7,100
July	362	223	134	720	6,950
August	409	231	135	774	6,890
September	422	217	135	773	6,860
October	400	214	134	749	6,800
November	388	207	135	730	6,740
December ⁶	445	228	135	808	6,680
2003:					
January	457	229	141	827	6,360
February	433	217	141	792	6,200
March	433	214	141	788	6,170
April	379	200	141	720	5,750

NA Not available.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Stocks reported by cobalt processors and consumers.

³Includes metal powder.

⁴Data may include other cobalt materials.

⁵Data from Defense National Stockpile Center. Includes material committed for sale pending shipment.

⁶Data based on monthly reports.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF COBALT, BY COUNTRY¹

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Metals ²		Oxides and hydroxides		Salts and compounds ³		Total cobalt content for the month ⁵	Cobalt content, year to date ^{5,6}
	Quantity	Value ⁴	Quantity	Value ⁴	Quantity	Value ⁴		
2002:								
March	749,000	\$12,200,000	162,000	\$2,690,000	216,000	\$849,000	924,000	2,560,000
April	676,000	11,100,000	79,000	1,230,000	268,000	1,080,000	805,000	3,370,000
May	731,000	12,500,000	155,000	2,310,000	176,000	801,000	893,000	4,260,000
June	560,000	10,200,000	82,600	1,330,000	163,000	831,000	669,000	4,930,000
July	569,000	9,910,000	102,000	1,730,000	253,000	1,090,000	713,000	5,640,000
August	309,000	5,510,000	81,600	1,400,000	188,000	886,000	421,000	6,060,000
September	599,000	9,120,000	115,000	1,690,000	235,000	815,000	744,000	6,810,000
October	574,000	9,710,000	106,000	1,480,000	274,000	942,000	725,000	7,530,000
November	321,000	5,550,000	77,000	1,040,000	195,000	657,000	430,000	7,960,000
December	415,000	6,480,000	90,600	1,220,000	147,000	587,000	520,000	8,480,000
January-December	6,840,000	114,000,000	1,300,000	20,000,000	2,580,000	10,500,000	8,480,000	XX
2003:								
January	384,000	6,640,000	65,200	1,020,000	66,300	234,000	449,000	449,000
February	511,000	8,840,000	121,000	1,630,000	91,100	382,000	623,000	1,070,000
March:								
Australia	20,000	340,000	--	--	--	--	20,000	38,000
Belgium	132,000	2,170,000	69,800	1,090,000	5,280	41,100	183,000	252,000
Brazil	20,000	326,000	--	--	--	--	20,000	73,300
Canada	46,700	786,000	--	--	--	--	46,700	187,000
China	3,000	73,400	73	2,200	--	--	3,050	7,150
Congo (Kinshasa)	24,900	366,000	--	--	--	--	24,900	39,700
Finland	32,800	685,000	12,000	150,000	34,800	187,000	52,300	245,000
France	2,980	140,000	2,070	55,600	--	--	4,480	19,900
Germany	--	--	904	76,400	--	--	651	1,560
Ireland	400	111,000	--	--	--	--	400	6,160
Japan	8,840	212,000	--	--	9,970	95,100	11,300	32,900
Korea, Republic of	--	--	--	--	--	--	--	105
Luxembourg	--	--	--	--	--	--	--	4,580
Norway	218,000	3,670,000	--	--	--	--	218,000	390,000
Philippines	--	--	--	--	--	--	--	3,660
Russia	223,000	3,910,000	--	--	--	--	223,000	457,000
South Africa	23,000	380,000	12,000	120,000	--	--	31,600	51,600
Sweden	9,080	248,000	--	--	--	--	9,080	16,400
Switzerland	1,020	47,100	--	--	--	--	1,020	1,720
Uganda	--	--	--	--	--	--	--	5,100
United Kingdom	8,240	20,800	27,100	562,000	18,000	100,000	32,300	61,800
Zambia	20,000	245,000	--	--	--	--	20,000	79,000
Total	794,000	13,700,000	124,000	2,050,000	68,100	424,000	903,000	1,970,000

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Unwrought cobalt, excluding alloys; includes cobalt cathode and cobalt metal powder; may include intermediate products of cobalt metallurgy.

³Includes cobalt acetates, cobalt carbonates, cobalt chlorides, and cobalt sulfates.

⁴Customs value.

⁵Estimated from gross weights.

⁶May include revisions to prior months.

Source: U.S. Census Bureau, with adjustments by the U.S. Geological Survey.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF ADDITIONAL COBALT MATERIALS, BY COUNTRY ¹

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Unwrought cobalt alloys		Cobalt waste and scrap		Wrought cobalt and cobalt articles	
	Quantity	Value ²	Quantity	Value ²	Quantity	Value ²
2002:						
March	1,420	\$187,000	18,400	\$149,000	20,900	\$1,080,000
April	210	6,350	15,300	124,000	33,500	1,320,000
May	3,600	144,000	13,100	107,000	29,000	977,000
June	679	24,700	21,000	161,000	13,200	855,000
July	11,400	135,000	5,780	63,600	18,900	1,060,000
August	1,860	126,000	10,000	87,900	14,100 ³	811,000 ³
September	21,300	241,000	20,600	168,000	14,600	779,000
October	4,680	84,800	34,700	169,000	12,300	854,000
November	200	13,900	9,310	96,000	19,300	1,010,000
December	843	45,700	6,550	100,000	16,600	960,000
January-December	56,900	1,310,000	206,000	1,720,000	231,000	11,600,000
2003:						
January	2,270	99,800	11,900	168,000	12,600	659,000
February	844	31,600	2,820	43,100	14,800	722,000
March:						
Belgium	--	--	10,400	197,000	373	14,800
Canada	--	--	--	--	2,370	435,000
China	--	--	--	--	36	6,750
France	--	--	8,440	76,900	876	114,000
Germany	907	37,000	--	--	--	--
Ireland	--	--	5,040	71,300	--	--
Japan	--	--	--	--	1,050	40,400
Korea, Republic of	1,000	31,700	--	--	--	--
Singapore	--	--	16,500	20,900	--	--
Switzerland	--	--	--	--	1	2,880
United Kingdom	--	--	38,900	170,000	7,520	339,000
Total	1,910	68,700	79,300	536,000	12,200	953,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Customs value.

³All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau, with adjustments by the U.S. Geological Survey.

TABLE 6
U.S. EXPORTS OF COBALT MATERIALS¹

(Kilograms, gross weight of material, except as noted)

Period	Unwrought cobalt, powders, matte, waste and scrap ²		Oxides and hydroxides		Salts and compounds ³		Total cobalt content for the month ⁵	Cobalt content, year to date ^{5, 6}
	Quantity	Value ⁴	Quantity	Value ⁴	Quantity	Value ⁴		
2002:								
March	167,000	\$3,370,000	5,820	\$71,700	12,200	\$67,700	174,000	471,000
April	161,000	3,690,000	35,500	483,000	19,000	97,200	191,000	662,000
May	77,700	1,800,000	57,600	656,000	36,300	185,000	128,000	790,000
June	233,000	4,800,000	71,400	663,000	29,800	208,000	292,000	1,080,000
July	69,700	1,680,000	62,800	1,150,000	12,200	52,700	118,000	1,200,000
August	132,000	3,180,000	71,100	765,000	16,600	75,100	188,000	1,390,000
September	110,000	2,380,000	46,600	511,000	12,700	59,500	146,000	1,530,000
October	99,400	2,900,000	84,700	926,000	5,970	24,600	162,000	1,700,000
November	173,000	3,520,000	47,000	741,000	61,700	233,000	221,000	1,920,000
December	110,000	1,730,000	44,100	606,000	95,000	244,000	165,000	2,080,000
January-December	1,600,000	34,800,000	558,000	7,040,000	329,000	1,430,000	2,080,000	XX
2003:								
January	151,000	2,800,000	39,200	475,000	17,100	166,000	183,000	183,000
February	143,000	2,820,000	23,700	336,000	54,200	316,000	173,000	357,000
March	101,000	3,070,000	44,800	459,000	17,000	102,000	146,000	503,000

XX Not applicable.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include other intermediate products of cobalt metallurgy and unwrought cobalt alloys.

³Cobalt acetates and cobalt chlorides.

⁴Free alongside ship (f.a.s.) value.

⁵Estimated from gross weights.

⁶Year to date may include revisions to prior months.

Source: U.S. Census Bureau, with adjustments by the U.S. Geological Survey.

TABLE 7
U.S. EXPORTS OF WROUGHT COBALT, COBALT ORE, AND CONCENTRATES¹

(Kilograms, gross weight of material, except as noted)

Period	Wrought cobalt and cobalt articles		Cobalt ore and concentrates	
	Quantity	Value ²	Quantity	Value ²
2002:				
March	55,300	\$1,710,000	575 ³	\$16,500 ³
April	106,000	2,450,000	--	--
May	74,500	2,100,000	2,910 ³	49,200 ³
June	68,100	2,340,000	2,610 ³	25,700 ³
July	87,100	2,630,000	27,700 ³	110,000 ³
August	83,300	2,570,000	5,290 ³	70,600 ³
September	90,600	2,500,000	1,780 ³	20,700 ³
October	60,000	1,940,000	16,300 ³	87,800 ³
November	51,400	1,880,000	158 ³	5,450 ³
December	64,700	1,650,000	10,200 ³	61,000 ³
January-December	923,000	26,600,000	307,000	1,310,000
2003:				
January	76,900	2,700,000	817 ³	8,240 ³
February	55,600	1,540,000	4,020 ³	44,500 ³
March	124,000	3,740,000	100 ³	3,860 ³

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Free alongside ship (f.a.s.) value.

³All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau, with adjustments by the U.S. Geological Survey.